

Application No.: 10/617,355

Atty Docket: MKSI 1003-1

In the Claims:

Claims 1-30 are pending in this application, and the status of each is listed below.

1. (currently amended) A computing apparatus configured for operating a graphical user interface (GUI) for enabling a user to graphically observe a measure of process quality of a manufacturing process, ~~comprising~~ comprising: a displaying mechanism configured to display an icon representing a workpiece, at least one of the location and color of the icon on the displaying mechanism indicating the process quality and a stage of processing of the manufacturing process for the represented workpiece.
2. (original) The apparatus of claim 1, wherein the display mechanism is configured to display concentric circles, each of the circles indicating a different process quality of the manufacturing process.
3. (currently amended) The apparatus of ~~claim 3~~ claim 2, wherein an innermost one of the concentric circles indicates a highest process quality, a next outermost one of the concentric circles indicates a lesser process quality, and a still next outermost one of the concentric circles indicates a still lesser process quality.
4. (original) The apparatus of claim 2, wherein the displaying mechanism is configured to display the icon in the concentric circle corresponding to the process quality of the manufacturing process for the represented workpiece.
5. (currently amended) ~~The apparatus of claim 4,~~ A computing apparatus configured for operating a graphical user interface (GUI) for enabling a user to graphically observe a measure of process quality of a manufacturing process, comprising:
a displaying mechanism configured to display an icon representing a workpiece, at least one of the location and color of the icon on the displaying mechanism indicating the process quality of the manufacturing process for the represented workpiece,
wherein the display mechanism is configured to display concentric circles, each

Application No.: 10/617,355

Atty Docket: MKSI 1003-1

of the circles indicating a different process quality of the manufacturing process,
wherein each of the concentric circles has a different color.

6. (original) The apparatus of claim 5, wherein the innermost concentric circle is green; the next outermost one of the concentric circles is yellow; and the still next outermost one of the concentric circles is red.
7. (currently amended) The apparatus of claim 6, wherein a display of the ~~icon in~~ icon in the green concentric circle indicates the process quality for the represented workpiece is acceptable; in the yellow circle indicates the process quality for the represented workpiece is marginal; and in the red circle indicates the process quality is unacceptable.
8. (original) The apparatus of claim 7, wherein a radius of the icon from the center of the concentric circles is a function of the worse of T2/T2-critical and DModX/DModX-critical.
9. (original) The apparatus of claim 8, wherein the workpiece is a semiconductor wafer.
10. (original) The apparatus of claim 1, wherein the displaying mechanism is configured to display a grid with an X-axis and a Y-axis, the position of the icon in the grid in the X-direction indicating a first measure of the process quality of the manufacturing process for the represented workpiece and the position of the icon in the grid in the Y-direction indicating a second measure of the process quality of the manufacturing process for the represented workpiece.
11. (currently amended) ~~The apparatus of claim 10,~~ A computing apparatus configured for operating a graphical user interface (GUI) for enabling a user to graphically observe a measure of process quality of a manufacturing process, comprising:
a displaying mechanism configured to display an icon representing a workpiece,

Application No.: 10/617,355

Atty Docket: MKSI 1003-1

at least one of the location and color of the icon on the displaying mechanism indicating the process quality of the manufacturing process for the represented workpiece,

wherein the displaying mechanism is configured to display a grid with an X-axis and a Y-axis, the position of the icon in the grid in the X-direction indicating a first measure of the process quality of the manufacturing process for the represented workpiece and the position of the icon in the grid in the Y-direction indicating a second measure of the process quality of the manufacturing process for the represented workpiece,

wherein the displaying mechanism is configured to display the icon in different colors, the different colors representing acceptability of the process quality of the manufacturing process for the represented workpiece, the color being selected as a function of the worse alarm level of DModX and T2.

12. (original) The apparatus of claim 11, wherein the icon is displayed in green to indicate an acceptable process quality; yellow to indicate a marginal process quality; and red to indicate an unacceptable process quality.

13. (original) The apparatus of claim 12, wherein the workpiece is a semiconductor wafer.

14. (original) The apparatus of claim 1, wherein the workpiece is a semiconductor wafer.

15. (currently amended) A semiconductor manufacturing system comprising:
a process tool;
a sensor that senses a process parameter;
a processor that processes data related to a semiconductor manufacturing process; and

a display configured to graphically display an icon representing a wafer, at least one of the location and color of the icon on the display indicating the process quality of the manufacturing process and a stage of processing for the represented workpiece.

Application No.: 10/617,355

Atty Docket: MKSI 1003-1

16. (original) The system of claim 15, wherein the display mechanism is configured to display concentric circles, the circles indicating different process quality of the manufacturing process.

17. (original) The system of claim 16, wherein an innermost one of the concentric circles indicates a highest process quality, a next outermost one of the concentric circles indicates a lesser process quality, and a still next outermost one of the concentric circles indicates a still lesser process quality.

18. (original) The system of claim 17, wherein the displaying mechanism is configured to display the icon in the concentric circle corresponding to the process quality of the manufacturing process for the represented wafer.

19. (currently amended) ~~The apparatus of claim 18,~~ A semiconductor manufacturing system comprising:

a process tool;

a sensor that senses a process parameter;

a processor that processes data related to a semiconductor manufacturing process; and

a display configured to graphically display an icon representing a wafer, at least one of the location and color of the icon on the display indicating the process quality of the manufacturing process for the represented workpiece,

wherein the display mechanism is configured to display concentric circles, the circles indicating different process quality of the manufacturing process,

wherein an innermost one of the concentric circles indicates a highest process quality, a next outermost one of the concentric circles indicates a lesser process quality, and a still next outermost one of the concentric circles indicates a still lesser process quality,

wherein the displaying mechanism is configured to display the icon in the concentric circle corresponding to the process quality of the manufacturing process for the represented wafer,

wherein each of the concentric circles has a different color.

Application No.: 10/617,355

Atty Docket: MKSI 1003-1

20. (original) The system of claim 19, wherein the innermost concentric circle is green; the next outermost one of the concentric circles is yellow; and the still next outermost one of the concentric circles is red.
21. (currently amended) The system of claim 20, wherein a display of the ~~icon in~~ icon in the green concentric circle indicates the process quality for the represented wafer is acceptable; in the yellow circle indicates the process quality for the represented wafer is marginal; and in the red circle indicates the process quality is unacceptable.
22. (original) The system of claim 21, wherein the wafer is a semiconductor wafer.
23. (original) The system of claim 15, wherein the displaying mechanism is configured to display a grid with an X-axis and a Y-axis, the position of the icon in the grid in the X-direction indicating a first measure of the process quality of the manufacturing process for the represented wafer and the position of the icon in the grid in the Y-direction indicating a second measure of the process quality of the manufacturing process for the represented wafer.
24. (currently amended) The system of claim 23, A semiconductor manufacturing system comprising:
a process tool;
a sensor that senses a process parameter;
a processor that processes data related to a semiconductor manufacturing process; and
a display configured to graphically display an icon representing a wafer, at least one of the location and color of the icon on the display indicating the process quality of the manufacturing process for the represented workpiece,
wherein the displaying mechanism is configured to display a grid with an X-axis and a Y-axis, the position of the icon in the grid in the X-direction indicating a first measure of the process quality of the manufacturing process for the represented wafer and the position of the icon in the grid in the Y-direction indicating a second measure of

Application No.: 10/617,355

Atty Docket: MKSI 1003-1

the process quality of the manufacturing process for the represented wafer

wherein the displaying mechanism is configured to display the icon in different colors, the different colors representing acceptability of the process quality of the manufacturing process for the represented workpiece.

25. (original) The system of claim 24, wherein the icon is displayed in green to indicate an acceptable process quality; yellow to indicate a marginal process quality; and red to indicate an unacceptable process quality.

26. (currently amended) A computer program product for supporting a terminal for enabling a user to graphically observe a measure of process quality of a manufacturing process, comprising:

at least one sequence of computer executable instructions; and

a computer readable memory medium bearing the executable instructions in computer readable form, wherein execution of the instructions by a processor causes the terminal to:

display a screen having areas corresponding to process quality of the manufacturing process; and

generate an icon on the display representative of a workpiece subjected to the manufacturing process; and

position the icon on the display in an area corresponding to the process quality and a stage of processing of the represented workpiece.

27. (original) The product of claim 26, wherein execution of the instructions by the processor further causes the terminal to color the icon with a color that indicates acceptability of the process quality of the represented workpiece.

28. (new) The computing apparatus of claim 1, wherein the stage of processing of the manufacturing process includes a type of processing chamber.

29. (new) The semiconductor manufacturing system of claim 15, wherein the stage of processing of the manufacturing process includes a type of processing chamber.

Application No.: 10/617,355

Atty Docker: MKSI 1003-1

30. (new) The product of claim 26, wherein the stage of processing of the manufacturing process includes a type of processing chamber.